1. (CURRENTLY AMENDED) A Z-axis assembly for an optical inspection apparatus comprising:

~~a)~~ a base;

~~b)~~ first and second rails secured to said base, said first and second rails being parallel to each other;

~~c)~~ a plurality of carriages supported by ball bearings for translatory movement parallel to the Z-axis on each of said first and second rails, said ball bearings having contact points with respective of the first and second rails, the contact points lying on at least a first line of travel for ~~said~~ carriages on one of the first and second rails and at least a second line of travel for carriages on the other of the first and second rails~~having a line of travel through said ball bearings in contact with their respective rails~~;

~~d)~~ a support structure secured to said carriages;

~~e)~~ a lens assembly secured to said support structure ~~such~~ so as to be movable parallel to the Z-axis and said lines of travel, said lens assembly including an ~~said~~ optical axis parallel to the Z-axis and said lines of travel, but spaced apart from the lines of travel so that said optical axis and all lines of travel lie on a common plane.

2. (CURRENTLY AMENDED) A Z-axis assembly as in claim 1, wherein:

~~a)~~ said base is U-shaped in cross-section including first and second upright walls; and

~~b)~~ said first and second rails are secured to respective first and second upright walls.

3. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 1, wherein said first and second rails include opposed longitudinal grooves along which said ball bearings travel.

4. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 1, wherein said carriages are U-shaped in cross-section.

5. (CURRENTLY AMENDED) A Z-axis assembly as in claim 1, wherein:

~~a)~~ said support structure is a box structure; and

~~b)~~ said lens assembly is disposed within said box structure.

6. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 5, wherein said box structure includes a front structure, a rear plate and first and second side members joined to said front structure and said rear plate.

7. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 6, wherein said front structure is joined to said carriages.

8. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 6, wherein said front structure is substantially open and cross-ribbed.

9. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 5, wherein said box structure is open at the bottom.

10. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 5, wherein said rear plate and said first and second side members form a U-shaped cross-section.

11. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 5, wherein said rear plate includes a bottom portion extending beyond a bottom portion of said front structure.

12. (CURRENTLY AMENDED) A Z-axis assembly as in claim 1, wherein said optical axis ~~lie~~ lies centrally between said line of travel of said carriages and coplanar with the lines of the bearing axis.

13. (CURRENTLY AMENDED) A Z-axis assembly for an optical inspection apparatus, comprising:

~~a)~~ a base;

~~b)~~ first and second rails secured to said base, said first and second rails being parallel to each other;

~~c)~~ a plurality of carriages supported by ball bearings for translatory movement parallel to the Z-axis on each of said first and second rails, said carriages each having a line of travel through said ball bearings in contact with their respective rails;

~~d)~~ a box structure support secured to said carriages;

~~e)~~ said box structure support including a front structure, a rear plate and first and second side members joined to said front structure; and

~~f)~~ said rear plate providing a platform for supporting a component of the optical inspection system.

14. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 13, an further comprising a lens assembly secured to said rear plate, said lens assembly including an optical axis parallel to the Z-axis and said lines of travel, said optical axis and said lines of travel lying on a common plane.

15. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 13, wherein said optical axis lie centrally between said line of travel of said carriages.

16. (PREVIOUSLY PRESENTED) A Z-axis assembly as in claim 13, wherein said rear plate includes a bottom portion extending beyond a bottom portion of said front structure.

17. (NEW) An optical inspection apparatus Z-axis assembly comprising:

a base;

first and second rails secured to said base, said first and second rails being parallel to each other;

at least one carriage supported for translatory movement parallel to the Z-axis on each of said first and second rails, each at least one carriage having at least a first line of travel on a respective one of the first and second rails;

a support structure secured to said carriages for translation parallel to the Z-axis and all of the lines of travel; and

a lens assembly secured to said support structure and including an optical axis parallel to the Z-axis and all of the lines of travel, the optical axis being spaced apart from the lines of travel so that the optical axis and all of the lines of travel lie on a common plane.

18. (NEW) The assembly of claim 17 wherein each of the at least on carriage is supported on its respective rail by ball bearings.

19. (NEW) The assembly of claim 18 wherein contact points of the ball bearings with a respective rail lie on a respective line of travel.